ABSTRACT

Representative embodiments provide for a computer including a program code configured to cause a processor to invert and thereafter calibrate first and second data sets, subtract the inverted second data set from the inverted first data set to derive a time-lapse data set, calculate a model including a plurality of parametric values, sort the plurality of parametric values into a plurality of bins, select, map and calibrate a plurality of optimal parametric values from the plurality of bins, and plot the plurality of calibrated optimal parametric values to represent at least one physical characteristic of a subterranean reservoir of hydrocarbons. The method includes deriving a time-lapse data set from a first seismic data set and a second seismic data set, deriving a model, sorting the plurality of values into bins, selecting, mapping and calibrating a plurality of optimal values from the bins, and plotting the calibrated values.